

U.S. Patent Application Serial No. **10/768,180**  
Amendment filed September 17, 2007  
Reply to OA dated May 18, 2007

**REMARKS**

Claims 1-20 are pending in this application, with claims 3, 5, 7-10 and 13-18 withdrawn from consideration. Claims 2 and 6 are canceled without prejudice or disclaimer, and claims 1 and 12 are amended herein. Upon entry of this amendment, claims 1, 3-5 and 7-20 will be pending, with claims 3, 5, 7-10 and 13-18 withdrawn from consideration. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is discussed below.

**Regarding priority.** (Office action page 2)

The Examiner notes that Applicant has not submitted a verified translation of the priority document. Since a verified translation is not necessary in order to overcome the date of a reference relied on by the Examiner (see 37 CFR 1.55(a)(4)(i)(B)), Applicant has not submitted a verified translation at this time.

**The abstract of the disclosure is again objected to because the first "sentence" is incomplete.** (Office action page 2)

The objection is overcome by the amendment to the abstract, which has been amended as requested by the Examiner.

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**Claims 12 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office action page. 3)**

The rejection is overcome by the amendment to claim 12. The claim is amended by deleting the word “to” before “said biopolymer,” and rearranging the position of the phrase “are periodically contained.” This amendment is for grammatical clarity only, and no new matter is added. As amended, the last portion of the claim reads: “said positive hole-transporting functional groups and/or said electron-transporting functional groups are periodically contained in said biopolymer and/or said synthetic polymer.” Reconsideration of the rejection is respectfully requested in view of the amendment.

**Claims 1, 2, 4, 6, 11, 12, 19, and 20 are rejected under 35 U.S.C. 103(a), as being unpatentable over Watanabe et al. (US 6,486,489 in view of Tierney et al. (J. Org. Chem. (2000) vol. 65, pp. 5355-5359). (Office action page 5)**

**Claim 19 is rejected under 35 U.S.C. 103(a), as being unpatentable over Watanabe et al. (US 6,486,489 in view of Tierney et al. (J. Org. Chem. (2000) vol. 65, pp. 5355-5359) as applied to claims 1, 2, 4, 6, 11, 12, 19, and 20, and further in view of Kronlage (GB 1278281). (Office action page. 8)**

Reconsideration of the rejection is respectfully requested in view of the amendment to claim

1.

Claim 1 has been amended to incorporate the limitation of claim 6, that “said functional element is an electrically conductive wire.” Claim 1 has also been amended to amend the biopolymer from “a synthetic polymer or a combination thereof” to --consisting of DNA or a hybrid thereof with RNA--. Support for this amendment may be found in original claim 2. Claims 2 and 6 are therefore canceled without prejudice or disclaimer.

In addition, claim 1 has been amended to add the recitation that: “said high molecular weight material is used as a foothold for three-dimensionally disposing as side chains the modifying functional groups, and donation and acceptance of electrons are essentially conducting between the three-dimensionally disposed modifying functional groups.” Support for this amendment may be generally found in the specification and drawings of the present application. In particular, support for the recitation regarding “donation and acceptance of electrons” may be found, for example, on page 3, lines 22-25, which discloses that the modifying functional groups may be positive hole-transporting functional groups or electron-transporting functional groups.

Comparing the present invention with Watanabe et al., no donation nor acceptance of electrons occurs in the high molecular weight material in the present invention. Contrary to this, according to Watanabe et al., which is directed to a transistor, the donation and acceptance of electrons are conducted in the DNA of the transistor, and are evaluated with an electrode connected to the DNA.

The Tierney et al. reference discloses DNA complexed with phenothiazine functional groups to the end portions of DNA. From the introduction portion of Tierney et al., it is understood that the

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donation and acceptance of electrons are conducted in the introduced redox modification functional groups, and the signals thereof are evaluated through the DNA connected to the functional groups. That is, Tierney et al. is silent concerning direct donation and acceptance of electrons between the functional groups.

Kronlage is clearly distinguished from the present invention, as it concerns FETs and production thereof, and teaches only the conventional type solid state transistors.

Applicant therefore submits that the pending claims are not obvious over Watanabe et al., Tierney et al., and Kronlage, taken separately or in combination.

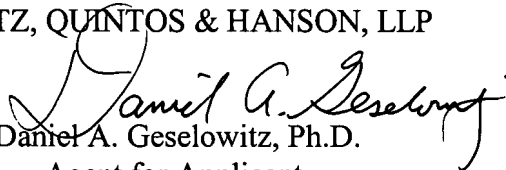
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: RCE Transmittal  
Petition for Extension of Time

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